

What is claimed is:

1. A light emitter comprising:
  - a tube having a first end and a second end;
  - a first aperture located proximate said tube first end;
  - 5 a second aperture located proximate said tube second end;
  - a lens located within said tube;
  - a base mechanism attached to said tube first end, said base mechanism having a cavity formed therein; and
  - 10 a light path extending between said cavity and said second aperture, said light path passing through said first aperture and through said lens.
2. The light emitter of claim 1 and further comprising a light source located within said base mechanism cavity, said light source being intersected by said light path.
3. The light emitter of claim 1, wherein said first aperture is smaller than said second aperture.
4. The light emitter of claim 1, wherein said first aperture is formed by a member that partially encloses said tube first end.
5. The light emitter of claim 4, wherein said member has a first side facing said tube first end and a second side facing away from said tube first end, wherein said first aperture is conical, the portion of said first aperture on said member first side being smaller than the portion of said aperture on said member second side.

6. The light emitter of claim 1, wherein said lens is a collimating lens.

7. The light emitter of claim 1, wherein said lens is a symmetrical convex lens.

8. The light emitter of claim 1, wherein said lens is an asymmetrical convex lens.

9. The light emitter of claim 1, wherein said lens has a focal length associated therewith and further comprising a light source, wherein said light source is located at a preselected location relative to said lens focal length.

10. The light emitter of claim 1, wherein said tube has an inner surface, said inner surface having a first portion and a second portion, wherein the diameter of said first portion is different than the diameter of said second portion, and wherein the junction of said first portion and said second portion forms a step.

11. The light emitter of claim 10, wherein said lens abuts said step.

12. The light emitter of claim 10, wherein said lens has a lens surface and a lens edge abutting said lens surface, said lens surface having a flat circumference portion extending from said lens edge, and wherein said lens flat circumference portion abuts said step.

13. The light emitter of claim 10, wherein said tube first portion has a length of about 20.9 millimeters.

14. The light emitter of claim 10, wherein said tube second portion has a length of about five millimeters.

15. The light emitter of claim 10, wherein said diameter of said tube first portion is about 7.66 millimeters.

16. The light emitter of claim 10, wherein said diameter of said tube second portion is about 8.65 millimeters.

17. The light emitter of claim 1, wherein said lens has a focal length of about 22.5 millimeters.

18. A light sensor comprising:

a light emitter comprising:

a tube having a first end and a second end;

5 a first aperture located proximate said tube first end;

a second aperture located proximate said tube second end;

a lens located within said tube;

10 a base mechanism attached to said tube first end, said base mechanism having a cavity formed therein;

a light receiver; and

15 a light path extending between said cavity and said receiver, wherein said light path passes through said tube first aperture, through said lens, and through said tube second aperture.

19. The light sensor of claim 18, wherein said cavity has a light source located therein and wherein said light path intersects said light source.

20. The light sensor of claim 19, wherein said light source is adapted to emit light having a preselected band of wavelengths and wherein said light receiver is adapted to detect light having said  
5 preselected band of wavelengths.

21. The light sensor of claim 20 and further comprising a light filter located in said light path, said light filter being adapted to pass light having said preselected band of wavelengths.

22. The light sensor of claim 18, wherein said first aperture is smaller than said second aperture.

23. The light sensor of claim 18 wherein said first aperture is formed by a member that partially encloses said tube first end.

24. The light sensor of claim 23 wherein said member has a first side facing said tube first end and a second side facing away from said tube first end, wherein said first aperture is conical, the portion of said first aperture on said member first side being smaller than the  
5 portion of said first aperture on said member second side.

25. The light sensor of claim 18, wherein said lens is a collimating lens.

26. The light sensor of claim 18, wherein said lens is a symmetrical convex lens.

27. The light sensor of claim 18, wherein said lens is an asymmetrical convex lens.

28. The light sensor of claim 18, wherein said lens has a focal length associated therewith and further comprising a light source located at a preselected location relative to said lens focal length.

29. The light sensor of claim 18, wherein said tube has an inner surface, said inner surface having a first portion and a second portion, wherein the diameter of said first portion is different than the diameter of said second portion, and wherein the junction of said first portion and said second portion forms a step.

30. The light sensor of claim 29, wherein said lens abuts said step.

31. The light sensor of claim 29, wherein said lens has a lens surface and a lens edge abutting said lens surface, said lens surface having a flat circumference portion extending from said lens edge, and wherein said lens flat circumference portion abuts said step.

32. An autochanger comprising:  
at least one media holding bay;  
a light emitter comprising:

a tube having a first end and a second end;  
a first aperture located proximate said tube first end;  
a second aperture located proximate said tube second end;  
a lens located in said tube;

a base mechanism attached to said tube  
first end, said base mechanism having a cavity  
formed therein;  
a light source located in said cavity  
15 adjacent said first aperture;  
a light receiver; and  
a light path extending between said light emitter  
and said light receiver, at least a portion of said light  
path being adjacent said at least one media holding bay.

33. The autochanger of claim 32, wherein said light  
source is adapted to emit light having a preselected band  
of wavelengths and wherein said light receiver is adapted  
to detect light having said preselected band of  
5 wavelengths.

34. The autochanger of claim 33 and further  
comprising a light filter located in said light path,  
said light filter being adapted to pass light having said  
preselected band of wavelengths.

35. The autochanger of claim 32, wherein said first  
aperture is smaller than said first aperture.

36. The autochanger of claim 32 wherein said first  
aperture is formed by a member that partially encloses  
said tube first end.

37. The autochanger of claim 36, wherein said  
member has a first side facing said tube first end and a  
second side facing away from said tube first end, wherein  
said first aperture is conical, the portion of said first  
5 aperture on said member first side being smaller than the  
portion of said aperture on said member second side.

38. The autochanger of claim 32, wherein said lens is a collimating lens.

39. The autochanger of claim 32, wherein said lens is a symmetrical convex lens.

40. The autochanger of claim 32, wherein said lens is an asymmetrical convex lens.

41. The autochanger of claim 32, wherein said lens has a focal length associated therewith and wherein said light source is located at a preselected location relative to said lens focal length.

42. The autochanger of claim 32, wherein said tube has an inner surface, said inner surface having a first portion and a second portion, wherein the diameter of said first portion is different than the diameter of said second portion, and wherein the junction of said first portion and said second portion forms a step.

43. The autochanger of claim 42, wherein said lens abuts said step.

44. The autochanger of claim 42, wherein said lens has a lens surface and a lens edge abutting said lens surface, said lens surface having a flat circumference portion extending from said lens edge, and wherein said lens flat circumference portion abuts said step.

45. An autochanger comprising:  
at least one media holding;  
means for producing a substantially collimated light beam; and

5            means for detecting said substantially collimated  
light beam; and

          a light path associated with said substantially  
collimated light beam extending between said light  
emitter and said light receiver, at least a portion of  
10    said light path being adjacent said at least one media  
holding bay.